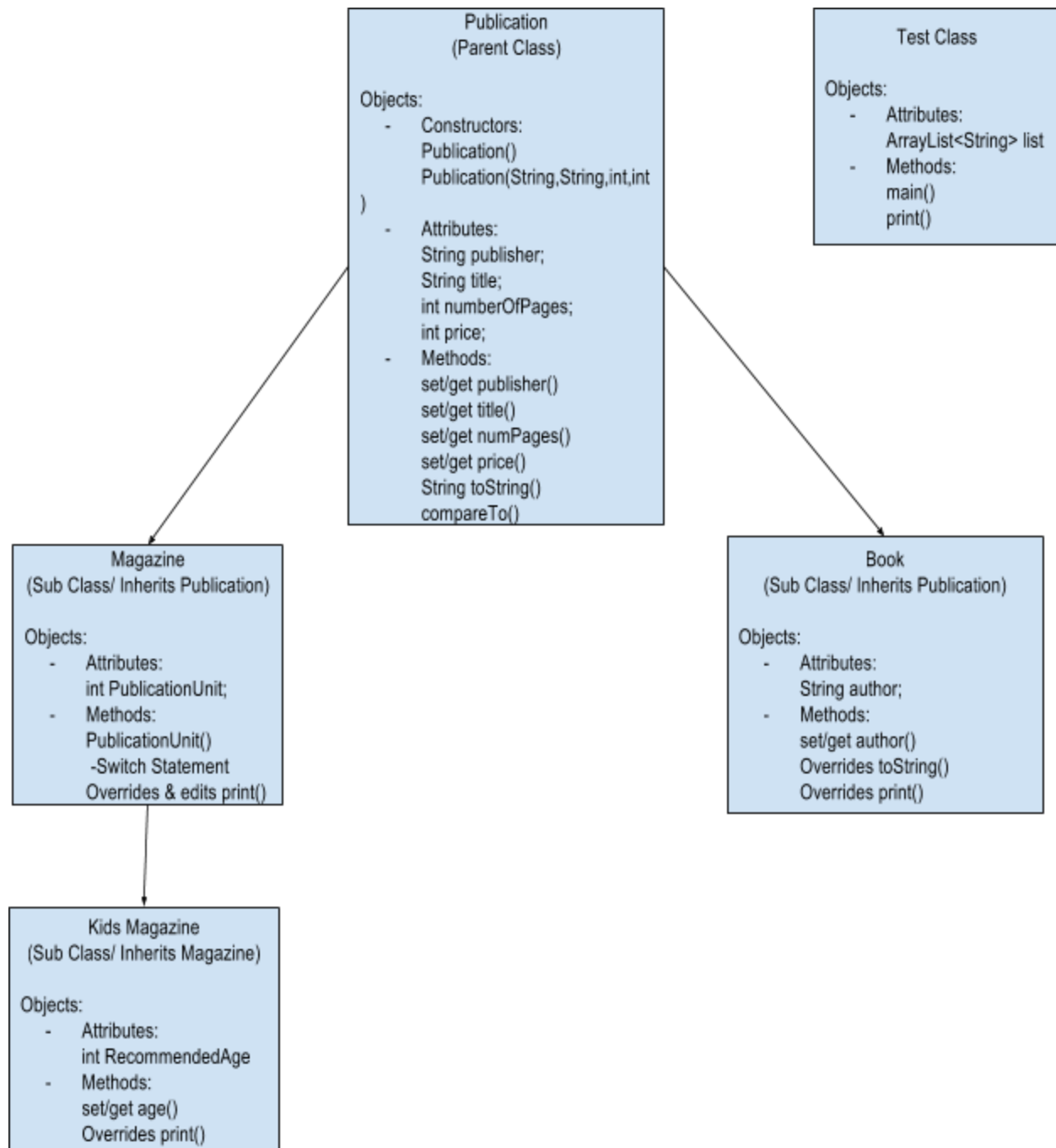


Brandon Mao
CSC 123-03
Professor Han
March 17, 2017
Program Project #2

Class Diagram:



//Java Code For All Classes:

//Publication Class

import java.util.*;

public class Publication implements Comparable<Publication>{

 //Attributes

 protected static String publisher;

 protected static int numPages;

 protected static double price;

 protected static String title;

 //Constructors

 public Publication(){

 this.publisher = publisher;

 this.numPages = numPages;

 this.price = price;

 this.title = title;

 }

 public Publication(String a, int b, double c, String d) {

 this.publisher = a;

 this.numPages = b;

 this.price = c;

 this.title = d;

 }

 //Methods

 public void setPublisher(String x){

 publisher = x;

 }

 public String getPublisher(){

 return publisher;

 }

 public void setTitle(String x){

 title = x;

 }

```

public String getTitle(){
    return this.title;
}

public void setNumPages(int x){
    numPages = x;
}

public int getNumPages(){
    return numPages;
}

public void setPrice(double x){
    price = x;
}

public double getPrice(){
    return price;
}

public void print(){
    System.out.println("Title: " + getTitle() +
        "\nPublisher: " + getPublisher() +
        "\nNumber of Pages: " + getNumPages() + " pages"+
        "\nPrice: $" + getPrice());
}

@Override
public int compareTo(Publication other) {
    int compareInt = this.title.compareTo(other.title);
    if(compareInt < 0) return -1;
    if(compareInt > 0) return 1;
    return 0;
}

public String toString(){
    return "Publisher: " + publisher + " \nTitle: " + title;
}

```

```
//Test
public static void main(String [] args){
    Scanner in = new Scanner(System.in);
    System.out.println("Title: ");
    String title = in.nextLine();
    System.out.println("Publisher: ");
    String publisher = in.nextLine();
    System.out.println("Number of Pages: ");
    int numPages = in.nextInt();
    System.out.println("Price: ");
    double price = in.nextDouble();
    Publication Publication = new Publication();
    Publication.setPublisher(publisher);
    Publication.setNumPages(numPages);
    Publication.setPrice(price);
    Publication.setTitle(title);
    Publication.print();
}

}
```

```

//Magazine Class
import java.util.*;
public class Magazine extends Publication{

    //Attributes
    protected static int publicationUnit; //monthly,weekly,biweekly

    //Constructor
    public Magazine() {
        super();
    }

    //Methods
    public void print(){
        super.print();
    }

    public void PublicationUnit(){
        Scanner in = new Scanner(System.in);
        System.out.println("What is the publication unit?\nEnter '1' for Monthly"
            + "\nEnter '2' for Weekly"
            + "\nEnter '3' for Biweekly");
        publicationUnit = in.nextInt();
        System.out.println("\nMagazine");
        switch(publicationUnit){
            case 1:
                print();
                System.out.println("Publication Unit: Monthly");
                break;
            case 2:
                print();
                System.out.println("Publication Unit: Weekly");
                break;
            case 3:
                print();
                System.out.println("Publication Unit: Biweekly");
                break;
        }
    }
}

```

```
//Test
public static void main(String[] args){
    Magazine Magazine = new Magazine();
    Magazine.PublicationUnit();
    Magazine.print();
}

}
```

```

//Kids Magazine Class
import java.util.*;
public class KidsMagazine extends Magazine{

    //Attributes
    protected static int age;

    //Constructor
    public KidsMagazine() {
        super();
    }

    //Methods
    public void print(){
        System.out.println("\nKids Magazine\nRecommended Age: +" + getAge());
        super.print();
    }

    public void setAge(){
        Scanner in = new Scanner(System.in);
        System.out.println("What is the recommended age for this magazine?");
        age = in.nextInt();
    }

    public int getAge(){
        return age;
    }

    //Test
    public static void main(String[] args){
        KidsMagazine KidsMagazine = new KidsMagazine();
        KidsMagazine.setAge();
        KidsMagazine.print();
    }
}

```

```

import java.util.*;    //Book Class
public class Book extends Publication{

    //Attributes
    protected static String author;

    //Constructor
    public Book() {
        super();
    }

    //Methods
    public void print(){
        System.out.println("\nBook\nAuthor: " + getAuthor());
        super.print();
    }

    public void setAuthor(){
        Scanner in = new Scanner(System.in);
        System.out.println("Who is the author?");
        author = in.nextLine();
    }

    public String getAuthor(){
        return author;
    }

    public String toString(){
        return super.toString() + "\nAuthor: " + author;
    }

    //Test
    public static void main(String[] args){
        Book Book = new Book();
        Book.setAuthor();
        Book.print();
    }
}

```



```

//Publication Test Class
import java.util.*;
public class PublicationTest {
    protected static ArrayList<String> list = new ArrayList<String>();

    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);
        Publication[] x = new Publication[20];
        System.out.println("Enter in 20 publication titles\n"
            + "Enter '1' for General\n"
            + "Enter '2' for Magazine \n"
            + "Enter '3' for Kids Magazine \n"
            + "Enter '4' for Book\n");
        for(int i = 0; i < 20; i++){
            System.out.println("1. General, 2. Magazine, 3. Kids Magazine, 4.
Book");

            int choice = in.nextInt();
            if(choice == 1){
                x[i] = new Publication();
                System.out.println("\nPublication title #" + (i+1) + " is a general
publication");

                Publication Publication = new Publication();
                printStuff();    //method for printing titles, publishers, prices, and
pages

                System.out.println("\nGeneral Publication");
                Publication.print();
                list.add("General Publication\nTitle: " + Publication.getTitle() +
                    "\nPublisher: " + Publication.getPublisher());
            }

            else if(choice == 2){
                x[i] = new Magazine();
                System.out.println("\nPublication title #" + (i+1) + " is a
magazine");

                Magazine Magazine = new Magazine();
                printStuff();
                Magazine.PublicationUnit();
                list.add("Magazine\nTitle: " + Magazine.getTitle() +

```

```

                                "\nPublisher: " + Magazine.getPublisher());
        }

        else if(choice == 3){
            x[i] = new KidsMagazine();
            System.out.println("\nPublication title #" + (i+1) + " is a kids
magazine");

            KidsMagazine KidsMagazine = new KidsMagazine();
            printStuff();
            KidsMagazine.setAge();
            KidsMagazine.print();
            list.add("Kids Magazine\nTitle: " + KidsMagazine.getTitle() +
                    "\nPublisher: " + KidsMagazine.getPublisher() );
        }

        else if(choice == 4){
            x[i] = new Book();
            System.out.println("\nPublication title #" + (i+1) + " is a book");
            Book Book = new Book();
            printStuff();
            Book.setAuthor();
            Book.print();
            list.add("Book\nTitle: " + Book.getTitle() +
                    "\nPublisher: " + Book.getPublisher() +
                    "\nAuthor: " + Book.getAuthor());
        }
        System.out.println();
    }

```

```

        System.out.println("\nFinished entering publication titles.\n-----Publications
Printed-----");
        for(int i = 0; i < list.size(); i++){
            System.out.println("Publication #" + (i+1) + ":\n" + list.get(i) + "\n");
        }
        System.out.println("-----Publications Sorted----- ");
        Collections.sort(list);
        for(int i = 0; i < list.size(); i++){
            System.out.println("Publication #" + (i+1) + ":\n" + list.get(i) + "\n");
        }
    }
}

```

```

    }

    int y = 0;
    while(y != 3){
        System.out.println("\nWhat would you like to do?\n"
            + "Enter '1' to Search an Array\n"
            + "Enter '2' to Print Out All Publications\n"
            + "Enter '3' to Exit the Program");
        y = in.nextInt();
        switch(y){
            case 1: System.out.println("\n-----Search Array-----\n");
                System.out.println("Which array do you want to search? Enter number
between 1-20");

                int num = in.nextInt();
                switch(num){
                    case 1: System.out.println(list.get(0));
                        break;
                    case 2: System.out.println(list.get(1));
                        break;
                    case 3: System.out.println(list.get(2));
                        break;
                    case 4: System.out.println(list.get(3));
                        break;
                    case 5: System.out.println(list.get(4));
                        break;
                    case 6: System.out.println(list.get(5));
                        break;
                    case 7: System.out.println(list.get(6));
                        break;
                    case 8: System.out.println(list.get(7));
                        break;
                    case 9: System.out.println(list.get(8));
                        break;
                    case 10: System.out.println(list.get(9));
                        break;
                    case 11: System.out.println(list.get(10));
                        break;
                    case 12: System.out.println(list.get(11));
                        break;
                }
            }
        }
    }
}

```

```

        case 13: System.out.println(list.get(12));
        break;
        case 14: System.out.println(list.get(13));
        break;
        case 15: System.out.println(list.get(14));
        break;
        case 16: System.out.println(list.get(15));
        break;
        case 17: System.out.println(list.get(16));
        break;
        case 18: System.out.println(list.get(17));
        break;
        case 19: System.out.println(list.get(18));
        break;
        case 20: System.out.println(list.get(19));
        break;
    }

    break;

    case 2: System.out.println("\n-----Print Publications-----\n");
    for(int i = 0; i < 20; i++){
        System.out.println("Publication #" + (i+1) + "\n" + list.get(i) +
"\n");
    }
    break;
}

if(y == 3){
    System.out.println("\n-----Exit Program-----\nNow
Leaving. Goodbye!");
    break;
}
}

}

public static void printStuff(){
    Scanner in = new Scanner(System.in);

```

```
        System.out.println("Title: ");
        String title = in.nextLine();
        System.out.println("Publisher: ");
        String publisher = in.nextLine();
        System.out.println("Number of Pages: ");
        int numOfPages = in.nextInt();
        System.out.println("Price: ");
        double price = in.nextDouble();
        Publication Publication2 = new Publication();
        Publication2.setPublisher(publisher);
        Publication2.setNumPages(numOfPages);
        Publication2.setPrice(price);
        Publication2.setTitle(title);
    }

}
```

Test Case(as displayed in console):

Enter in 20 publication titles

Enter '1' for General

Enter '2' for Magazine

Enter '3' for Kids Magazine

Enter '4' for Book

1. General, 2. Magazine, 3. Kids Magazine, 4. Book
3

Publication title #1 is a kids magazine

Title:

Amazing Facts of Wildlife

Publisher:

Discovery

Number of Pages:

30

Price:

4.99

What is the recommended age for this magazine?

6

Kids Magazine

Recommended Age: +6

Title: Amazing Facts of Wildlife

Publisher: Discovery

Number of Pages: 30 pages

Price: \$4.99

1. General, 2. Magazine, 3. Kids Magazine, 4. Book
2

Publication title #2 is a magazine

Title:

Muscle

Publisher:

Muscle Co.

Number of Pages:

30

Price:

5.99

What is the publication unit?

Enter '1' for Monthly
Enter '2' for Weekly
Enter '3' for Biweekly
3

Magazine
Title: Muscle
Publisher: Muscle Co.
Number of Pages: 30 pages
Price: \$5.99
Publication Unit: Biweekly

1. General, 2. Magazine, 3. Kids Magazine, 4. Book
1

Publication title #3 is a general publication
Title:
X-Men
Publisher:
Marvel
Number of Pages:
20
Price:
2.00

General Publication
Title: X-Men
Publisher: Marvel
Number of Pages: 20 pages
Price: \$2.0

1. General, 2. Magazine, 3. Kids Magazine, 4. Book
1

Publication title #4 is a general publication
Title:
Official Pokemon Guide Book
Publisher:
Nintendo
Number of Pages:
150
Price:
9.99

General Publication

Title: Official Pokemon Guide Book

Publisher: Nintendo

Number of Pages: 150 pages

Price: \$9.99

1. General, 2. Magazine, 3. Kids Magazine, 4. Book
4

Publication title #5 is a book

Title:

Magic School Bus

Publisher:

Scholastic

Number of Pages:

35

Price:

3.99

Who is the author?

Joanna Cole

Book

Author: Joanna Cole

Title: Magic School Bus

Publisher: Scholastic

Number of Pages: 35 pages

Price: \$3.99

1. General, 2. Magazine, 3. Kids Magazine, 4. Book
3

Publication title #6 is a kids magazine

Title:

WWE Kids

Publisher:

WWE

Number of Pages:

30

Price:

3.99

What is the recommended age for this magazine?

8

Kids Magazine

Recommended Age: +8

Title: WWE Kids

Publisher: WWE

Number of Pages: 30 pages

Price: \$3.99

1. General, 2. Magazine, 3. Kids Magazine, 4. Book
1

Publication title #7 is a general publication

Title:

SpiderMan

Publisher:

Marvel

Number of Pages:

25

Price:

0.99

General Publication

Title: SpiderMan

Publisher: Marvel

Number of Pages: 25 pages

Price: \$0.99

1. General, 2. Magazine, 3. Kids Magazine, 4. Book
2

Publication title #8 is a magazine

Title:

Cover Magazine

Publisher:

Cover Co.

Number of Pages:

30

Price:

4.99

What is the publication unit?

Enter '1' for Monthly

Enter '2' for Weekly

Enter '3' for Biweekly

2

Magazine

Title: Cover Magazine

Publisher: Cover Co.

Number of Pages: 30 pages

Price: \$4.99

Publication Unit: Weekly

1. General, 2. Magazine, 3. Kids Magazine, 4. Book
1

Publication title #9 is a general publication

Title:

Top 10 Islands of the World

Publisher:

National Geographic

Number of Pages:

50

Price:

3.99

General Publication

Title: Top 10 Islands of the World

Publisher: National Geographic

Number of Pages: 50 pages

Price: \$3.99

1. General, 2. Magazine, 3. Kids Magazine, 4. Book
4

Publication title #10 is a book

Title:

Captain Underpants

Publisher:

Scholastic

Number of Pages:

60

Price:

5.99

Who is the author?

Dave Pilky

Book

Author: Dave Pilky

Title: Captain Underpants

Publisher: Scholastic

Number of Pages: 60 pages

Price: \$5.99

1. General, 2. Magazine, 3. Kids Magazine, 4. Book
4

Publication title #11 is a book

Title:

No David No

Publisher:

Scholastic

Number of Pages:

20

Price:

2.99

Who is the author?

David Shannon

Book

Author: David Shannon

Title: No David No

Publisher: Scholastic

Number of Pages: 20 pages

Price: \$2.99

1. General, 2. Magazine, 3. Kids Magazine, 4. Book
4

Publication title #12 is a book

Title:

The Very Hungry Caterpillar

Publisher:

Penguin Co.

Number of Pages:

20

Price:

2.99

Who is the author?

Eric Carlie

Book

Author: Eric Carle

Title: The Very Hungry Caterpillar

Publisher: Penguin Co.

Number of Pages: 20 pages

Price: \$2.99

1. General, 2. Magazine, 3. Kids Magazine, 4. Book
2

Publication title #13 is a magazine

Title:

NBA Highlights

Publisher:

NBA

Number of Pages:

30

Price:

5.99

What is the publication unit?

Enter '1' for Monthly

Enter '2' for Weekly

Enter '3' for Biweekly

3

Magazine

Title: NBA Highlights

Publisher: NBA

Number of Pages: 30 pages

Price: \$5.99

Publication Unit: Biweekly

1. General, 2. Magazine, 3. Kids Magazine, 4. Book
1

Publication title #14 is a general publication

Title:

Superman Vs Batman

Publisher:

DC Comics

Number of Pages:

20

Price:

0.79

General Publication

Title: Superman Vs Batman

Publisher: DC Comics

Number of Pages: 20 pages

Price: \$0.79

1. General, 2. Magazine, 3. Kids Magazine, 4. Book
2

Publication title #15 is a magazine

Title:

TIME

Publisher:

TIME Co.

Number of Pages:

20

Price:

2

What is the publication unit?

Enter '1' for Monthly

Enter '2' for Weekly

Enter '3' for Biweekly

2

Magazine

Title: TIME

Publisher: TIME Co.

Number of Pages: 20 pages

Price: \$2.0

Publication Unit: Weekly

1. General, 2. Magazine, 3. Kids Magazine, 4. Book
3

Publication title #16 is a kids magazine

Title:

Highlight

Publisher:

Highlight Kids

Number of Pages:

20

Price:

2.99

What is the recommended age for this magazine?

4

Kids Magazine

Recommended Age: +4

Title: Highlight

Publisher: Highlight Kids

Number of Pages: 20 pages

Price: \$2.99

1. General, 2. Magazine, 3. Kids Magazine, 4. Book

4

Publication title #17 is a book

Title:

Diary of a Wimpy Kid

Publisher:

Amulet Books

Number of Pages:

110

Price:

6.99

Who is the author?

Jeff Kinney

Book

Author: Jeff Kinney

Title: Diary of a Wimpy Kid

Publisher: Amulet Books

Number of Pages: 110 pages

Price: \$6.99

1. General, 2. Magazine, 3. Kids Magazine, 4. Book

1

Publication title #18 is a general publication

Title:

Star Wars Episode IV

Publisher:

Lucas Films

Number of Pages:

20

Price:

1

General Publication

Title: Star Wars Episode IV

Publisher: Lucas Films

Number of Pages: 20 pages

Price: \$1.0

1. General, 2. Magazine, 3. Kids Magazine, 4. Book

4

Publication title #19 is a book

Title:

Green Eggs and Ham

Publisher:

Random House

Number of Pages:

20

Price:

2.99

Who is the author?

Dr.Suess

Book

Author: Dr.Suess

Title: Green Eggs and Ham

Publisher: Random House

Number of Pages: 20 pages

Price: \$2.99

1. General, 2. Magazine, 3. Kids Magazine, 4. Book

4

Publication title #20 is a book

Title:

Cat in the Hat

Publisher:

Random House

Number of Pages:

20

Price:

2.99

Who is the author?

Dr.Suess

Book

Author: Dr.Suess

Title: Cat in the Hat

Publisher: Random House

Number of Pages: 20 pages

Price: \$2.99

Finished entering publication titles.

-----Publications Printed-----

Publication #1:

Kids Magazine

Title: Amazing Facts of Wildlife

Publisher: Discovery

Publication #2:

Magazine

Title: Muscle

Publisher: Muscle Co.

Publication #3:

General Publication

Title: X-Men

Publisher: Marvel

Publication #4:

General Publication

Title: Official Pokemon Guide Book

Publisher: Nintendo

Publication #5:

Book

Title: Magic School Bus

Publisher: Scholastic

Author: Joanna Cole

Publication #6:

Kids Magazine

Title: WWE Kids
Publisher: WWE

Publication #7:
General Publication
Title: SpiderMan
Publisher: Marvel

Publication #8:
Magazine
Title: Cover Magazine
Publisher: Cover Co.

Publication #9:
General Publication
Title: Top 10 Islands of the World
Publisher: National Geographic

Publication #10:
Book
Title: Captain Underpants
Publisher: Scholastic
Author: Dave Pilky

Publication #11:
Book
Title: No David No
Publisher: Scholastic
Author: David Shannon

Publication #12:
Book
Title: The Very Hungry Caterpillar
Publisher: Penguin Co.
Author: Eric Carle

Publication #13:
Magazine
Title: NBA Highlights
Publisher: NBA

Publication #14:
General Publication

Title: Superman Vs Batman
Publisher: DC Comics

Publication #15:
Magazine
Title: TIME
Publisher: TIME Co.

Publication #16:
Kids Magazine
Title: Highlight
Publisher: Highlight Kids

Publication #17:
Book
Title: Diary of a Wimpy Kid
Publisher: Amulet Books
Author: Jeff Kinney

Publication #18:
General Publication
Title: Star Wars Episode IV
Publisher: Lucas Films

Publication #19:
Book
Title: Green Eggs and Ham
Publisher: Random House
Author: Dr.Suess

Publication #20:
Book
Title: Cat in the Hat
Publisher: Random House
Author: Dr.Suess

-----Publications Sorted-----

Publication #1:
Book
Title: Captain Underpants
Publisher: Scholastic
Author: Dave Pilky

Publication #2:

Book

Title: Cat in the Hat

Publisher: Random House

Author: Dr.Suess

Publication #3:

Book

Title: Diary of a Wimpy Kid

Publisher: Amulet Books

Author: Jeff Kinney

Publication #4:

Book

Title: Green Eggs and Ham

Publisher: Random House

Author: Dr.Suess

Publication #5:

Book

Title: Magic School Bus

Publisher: Scholastic

Author: Joanna Cole

Publication #6:

Book

Title: No David No

Publisher: Scholastic

Author: David Shannon

Publication #7:

Book

Title: The Very Hungry Caterpillar

Publisher: Penguin Co.

Author: Eric Carle

Publication #8:

General Publication

Title: Official Pokemon Guide Book

Publisher: Nintendo

Publication #9:

General Publication

Title: SpiderMan
Publisher: Marvel

Publication #10:
General Publication
Title: Star Wars Episode IV
Publisher: Lucas Films

Publication #11:
General Publication
Title: Superman Vs Batman
Publisher: DC Comics

Publication #12:
General Publication
Title: Top 10 Islands of the World
Publisher: National Geographic

Publication #13:
General Publication
Title: X-Men
Publisher: Marvel

Publication #14:
Kids Magazine
Title: Amazing Facts of Wildlife
Publisher: Discovery

Publication #15:
Kids Magazine
Title: Highlight
Publisher: Highlight Kids

Publication #16:
Kids Magazine
Title: WWE Kids
Publisher: WWE

Publication #17:
Magazine
Title: Cover Magazine
Publisher: Cover Co.

Publication #18:
Magazine
Title: Muscle
Publisher: Muscle Co.

Publication #19:
Magazine
Title: NBA Highlights
Publisher: NBA

Publication #20:
Magazine
Title: TIME
Publisher: TIME Co.

What would you like to do?
Enter '1' to Search an Array
Enter '2' to Print Out All Publications
Enter '3' to Exit the Program
1

-----Search Array-----

Which array do you want to search? Enter number between 1-20
1
Book
Title: Captain Underpants
Publisher: Scholastic
Author: Dave Pilky

What would you like to do?
Enter '1' to Search an Array
Enter '2' to Print Out All Publications
Enter '3' to Exit the Program
2

-----Print Publications-----

Publication #1
Book
Title: Captain Underpants
Publisher: Scholastic

Author: Dave Pilky

Publication #2

Book

Title: Cat in the Hat

Publisher: Random House

Author: Dr.Suess

Publication #3

Book

Title: Diary of a Wimpy Kid

Publisher: Amulet Books

Author: Jeff Kinney

Publication #4

Book

Title: Green Eggs and Ham

Publisher: Random House

Author: Dr.Suess

Publication #5

Book

Title: Magic School Bus

Publisher: Scholastic

Author: Joanna Cole

Publication #6

Book

Title: No David No

Publisher: Scholastic

Author: David Shannon

Publication #7

Book

Title: The Very Hungry Caterpillar

Publisher: Penguin Co.

Author: Eric Carlie

Publication #8

General Publication

Title: Official Pokemon Guide Book

Publisher: Nintendo

Publication #9
General Publication
Title: SpiderMan
Publisher: Marvel

Publication #10
General Publication
Title: Star Wars Episode IV
Publisher: Lucas Films

Publication #11
General Publication
Title: Superman Vs Batman
Publisher: DC Comics

Publication #12
General Publication
Title: Top 10 Islands of the World
Publisher: National Geographic

Publication #13
General Publication
Title: X-Men
Publisher: Marvel

Publication #14
Kids Magazine
Title: Amazing Facts of Wildlife
Publisher: Discovery

Publication #15
Kids Magazine
Title: Highlight
Publisher: Highlight Kids

Publication #16
Kids Magazine
Title: WWE Kids
Publisher: WWE

Publication #17
Magazine
Title: Cover Magazine

Publisher: Cover Co.

Publication #18

Magazine

Title: Muscle

Publisher: Muscle Co.

Publication #19

Magazine

Title: NBA Highlights

Publisher: NBA

Publication #20

Magazine

Title: TIME

Publisher: TIME Co.

What would you like to do?

Enter '1' to Search an Array

Enter '2' to Print Out All Publications

Enter '3' to Exit the Program

3

-----Exit Program-----

Now Leaving. Goodbye!